REMARKS

In the Office Action, claims 1-113 were rejected. By this Response, claims 1, 5, 12, 14, 18, 24, 26, 31, 33, 38, 77, 81, 87, 89, 92, 98, 100, 105, 107 and 112 are amended, and claims 4, 17, 40-76, 80 and 91 are canceled. Upon entry of the amendments, claims 1-3, 5-13, 14-16, 18-25, 26-39, 77-79, 81-88, 89-90, 92-99 and 100-113 will be pending in the present patent application. Reconsideration and allowance of all pending claims are requested.

Rejection under 35 USC § 101

Claims 40-76 were rejected under 35 U.S.C. § 101 because the claimed invention was said to be drawn to non-statutory subject matter. The rejection is moot in view of the cancellation of these claims.

Rejections Under 35 U.S.C. § 102

Claims 1-113 were rejected under 35 U.S.C. § 102(a) as being anticipated by "Design-Ease Software Version 6 User's Guide" Stat-Ease Inc. Copyright 2000. Claims 1-113 were also rejected under 35 U.S.C. § 102(b) as being anticipated by "Conducting Experiments With Experiment Manager", M. Angel, pp. 535-541, Proceedings 1996 Winter Simulation Conference ACM 1996. Anticipation requires the disclosure in a single prior art reference of each element of the claim under consideration.

Claims 1-13

Independent claim 1 was rejected as being anticipated by "Design-Ease Software Version 6 User's Guide" Stat-Ease Inc. Copyright 2000. Independent claim 1 was also rejected as being anticipated by "Conducting Experiments With Experiment Manager", M. Angel, pp. 535-541, Proceedings 1996 Winter Simulation Conference ACM 1996. Claim 1 recites a system for assessing the performance of an algorithm during development. The system comprises a design of experiments component that establishes an acceptable number of experiments for analyzing the algorithm. The system further

comprises an experiment performance component that runs the established number of experiments for the algorithm, and a simulation component that simulates the behavior of the algorithm using results from the experiment performance component. The experiment performance component comprises a performance metric component that evaluates the results of the experiments run for the algorithm. The evaluation comprises comparing the results with a baseline algorithm and a performance metric.

The Examiner indicated that similar components were present in the Design-Ease reference and the Angel reference. However, neither the Design-Ease reference nor the Angel reference anticipates the system of claim 1 for at least the reasons set forth below.

Claim 1 has been amended by this Response. The amendment adds that the experiment performance component comprises a performance metric component that evaluates the results of the experiments run for the algorithm. The evaluation comprises comparing the results with a baseline algorithm and a performance metric. At least these recitations are not taught either by the Design-Ease reference or by the Angel reference.

The Design-Ease reference discloses a Design-Ease software tool for performing Design of Experiments (DOE). The Design-Ease Software tool provides a variety of statistical tools for performing two-level factorial screening experiments to identify the vital factors that identify a process or product.

The Angel reference discloses a tool for the design and analysis of simulation experiments called the Experiment Manager. The Experiment Manager tool is used to design, execute and analyze statistical simulation experiments. The tool is useful for selecting the factors (variables) of interest for the experiment and specifies the scenarios (values for the variables) for execution.

The Examiner contended that the above references disclose an experiment performance component. However, Applicant points out that neither the Design-Ease reference nor the Angel reference discloses an experiment performance component that evaluates the results of the experiments run for the algorithm, wherein the evaluation comprises comparing the results with a baseline algorithm and a performance metric. In accordance with the present application, the experiment performance component evaluates the contribution of the algorithm under development using a baseline algorithm and a performance metric, and compares the results obtained to the baseline algorithm and the performance metric. Further, the performance metric contains evaluation criteria for comparing the results of the experiments to a baseline algorithm.

The sections in pages 6-1, 3-5 and 8-10 referred to by the Examiner in the Design-Ease reference disclose options provided by the Design-Ease software for selecting the number of runs for an experiment and options for displaying the levels of factors in a design. Similarly, sections 2, 3, Table 1 and Fig. 3 referred to by the Examiner in the Angel reference disclose the features of the Experiment Manager Tool that help in the design, execution and analysis of statistical simulation experiments. In addition, the above sections in Angel describe a display screen of an experiment input and output table generated by the Experiment Manager Tool, that specifies the factors to vary for a particular simulation experiment and the levels to use for the selected factors.

Clearly, the above sections do not teach a system for assessing the performance of an algorithm using an experiment performance component that evaluates the results of the experiments run for the algorithm, wherein the evaluation comprises comparing the results with a baseline algorithm and a performance metric, as recited in claim 1.

Because neither the Design-Ease reference nor the Angel reference disclose a performance metric component for evaluating the results of the experiments run for the algorithm, wherein the evaluation comprises comparing the results with a baseline

algorithm and a performance metric, the references cannot anticipate claim 1. Accordingly, neither the Design-Ease reference nor the Angel reference supports a *prima facie* case of anticipation of claim 1. Claim 1 and the claims depending therefrom are believed to be clearly patentable over Design-Ease reference and the Angel reference as well as other prior art of record.

Claims 14-25

Independent claim 14 was similarly rejected as being anticipated by the Design-Ease reference. Independent claim 14 was also rejected as being anticipated by "Conducting Experiments With Experiment Manager", M. Angel, pp. 535-541, Proceedings 1996 Winter Simulation Conference ACM 1996. Claim 14 recites a system for assessing the performance of an algorithm during development. The system comprises a design of experiments component that establishes an acceptable number of experiments for analyzing the algorithm. The system further comprises an experiment performance component that runs the established number of experiments for the algorithm. The experiment performance component comprises a performance metric component that evaluates the results of the experiments run for the algorithm. The evaluation comprises comparing the results with a baseline algorithm and a performance metric. The system also comprises a simulation component that simulates the behavior of the algorithm using results from the experiment performance component and a simulation performance component that evaluates the performance of the simulation of the algorithm.

As discussed with respect to claim 1 above, neither the Design-Ease reference nor the Angel reference disclose a performance metric component for evaluating the results of the experiments run for the algorithm, wherein the evaluation comprises comparing the results with a baseline algorithm and a performance metric. Therefore, neither the Design-Ease reference nor the Angel reference supports a *prima facie* case of anticipation of claim 14. Accordingly, claim 14 and the claims depending therefrom are believed to

be clearly patentable over the Design-Ease reference and the Angel reference as well as other prior art of record.

Claims 26-32

Independent claim 26 was similarly rejected as being anticipated by the Design-Ease reference. Independent claim 26 was also rejected as being anticipated by "Conducting Experiments With Experiment Manager", M. Angel, pp. 535-541, Proceedings 1996 Winter Simulation Conference ACM 1996. Claim 26 recites a system for assessing the performance of an algorithm during development. The system comprises a design of experiments component that establishes an acceptable number of experiments for analyzing the algorithm. The system further comprises an experiment performance component that runs the established number of experiments for the algorithm and uses a performance metric to evaluate the results of the experiments. The evaluation comprises comparing the results with a baseline algorithm and a performance metric. The system also comprises a Monte Carlo simulation component that simulates the behavior of the algorithm using results from the experiment performance component with a Monte Carlo simulation, and a simulation performance component that evaluates the performance of the Monte Carlo simulation of the algorithm.

As discussed with respect to claim 1 above, neither the Design-Ease reference nor the Angel reference disclose evaluating the results of the experiments run for the algorithm, wherein the evaluation comprises comparing the results with a baseline algorithm and a performance metric. Therefore, neither the Design-Ease reference nor the Angel reference supports a *prima facie* case on anticipation of claim 26. Accordingly, claim 26 and the claims depending therefrom are believed to be clearly patentable over the Design-Ease reference and the Angel reference as well as other prior art of record.

Claims 33-37

Independent claim 33 was similarly rejected as being anticipated by the Design-Ease reference. Independent claim 33 was also rejected as being anticipated by "Conducting Experiments With Experiment Manager", M. Angel, pp. 535-541, Proceedings 1996 Winter Simulation Conference ACM 1996. Claim 33 recites a system for assessing the performance of an algorithm during development. The system comprises a design of experiments component that establishes an acceptable number of experiments for analyzing the algorithm. The system further comprises an experiment performance component that runs the established number of experiments for the algorithm, and a performance metric component that evaluates the results of the experiments run for the algorithm. The evaluation comprises comparing the results with a baseline algorithm and a performance metric. The system also comprises an algorithm adjustment component that adjusts logic or parameters of the algorithm for unacceptable results. The adjustment is performed during the development of the algorithm.

As discussed with respect to claim 1 above, neither the Design-Ease reference nor the Angel reference disclose a performance metric component that evaluates the results of the experiments run for the algorithm, wherein the evaluation comprises comparing the results with a baseline algorithm and a performance metric. In addition, claim 33 was further amended to recite that the adjustment of logic or parameters by the algorithm adjustment component is performed during the development of the algorithm, to provide clarity and particularity for a person of ordinary skill in the art to understand both the utilization and scope of the invention.

Therefore, for the reasons set forth above, neither the Design-Ease reference nor the Angel reference support a *prima facie* case on anticipation of claim 33. Accordingly, claim 33 and the claims depending therefrom are believed to be clearly patentable over the Design-Ease reference and the Angel reference as well as other prior art of record.

Claims 38-39

Independent claim 38 was similarly rejected as being anticipated by the Design-Ease reference. Independent claim 38 was also rejected as being anticipated by "Conducting Experiments With Experiment Manager", M. Angel, pp. 535-541, Proceedings 1996 Winter Simulation Conference ACM 1996. Claim 38 recites a system for assessing the performance of an algorithm during development. The system comprises a Monte Carlo simulation component that simulates the behavior of the algorithm using a Monte Carlo simulation. The Monte Carlo simulation component uses at least one confusion matrix to simulate the behavior of the algorithm. The Monte Carlo simulation component further computes a z-score based on one or more entries in the confusion matrix, wherein the z-scores generate random values that reflect the behavior of the algorithm in the confusion matrix. The system further comprises a simulation performance component that evaluates the performance of the Monte Carlo simulation for the algorithm, and an algorithm adjustment component that adjusts logic or parameters of the algorithm for unacceptable results, wherein the adjustment is performed during the development of the algorithm.

The Examiner indicated that similar components were present in the Design-Ease reference and the Angel reference. However, neither the Design-Ease reference nor the Angel reference anticipates the system of claim 38 for at least the reasons set forth below.

Claim 38 has been amended by this Response. The amendment adds that the Monte Carlo simulation component computes a z-score based on one or more entries in the confusion matrix, wherein the z-scores generate random values that reflect the behavior of the algorithm in the confusion matrix. In addition, claim 38 has been amended to recite that the adjustment of logic or parameters by the algorithm adjustment component is performed during the development of the algorithm, to provide clarity and particularity to a person of ordinary skill in the art to understand both the utilization and

scope of the invention. At least these recitations are not taught either by the Design-Ease reference or the Angel reference.

As mentioned above, the Design-Ease reference discloses a Design-Ease software tool for performing Design of Experiments (DOE). The Design-Ease Software tool provides a variety of statistical tools for performing two-level factorial screening experiments to identify the vital factors that identify a process or product. The Angel reference discloses a tool for the design and analysis of simulation experiments called the Experiment Manager. The Experiment Manager tool is used to design, execute and analyze statistical simulation experiments. The tool is useful for selecting the factors (variables) of interest for the experiment and specifies the scenarios (values for the variables) for execution.

The Examiner contended that the above references disclose a Monte Carlo simulation component that uses at least one confusion matrix to simulate the behavior of the algorithm. However, the Applicant points out that neither the Design-Ease reference nor the Angel reference discloses a Monte Carlo simulation component that uses at least one confusion matrix to simulate the behavior of the algorithm. Further, neither of the above references recite that the Monte Carlo simulation component further computes a z-score based on one or more entries in the confusion matrix, wherein the z-scores generate random values that reflect the behavior of the algorithm in the confusion matrix.

Therefore, for the reasons set forth above, neither the Design-Ease reference nor the Angel reference supports a *prima facie* case on anticipation of claim 38. Accordingly, claim 38 and the claims depending therefrom are believed to be clearly patentable over the Design-Ease reference and the Angel reference as well as other prior art of record.

Claims 77, 89, 100, 107 and 112

Independent claims 77, 89, 100, 107 and 112 were similarly rejected as being anticipated by the Design-Ease reference. Independent claims 77, 89, 100, 107 and 112 were also rejected as being anticipated by "Conducting Experiments With Experiment Manager", M. Angel, pp. 535-541, Proceedings 1996 Winter Simulation Conference ACM 1996. Claims 77, 89, 107 and 112 are essentially similar to system claims 1, 14, 26, 33 and 38 respectively, except that they recite a computer-readable medium with code for carrying out such functionality.

Claims 77, 89, 100 and 107 have been amended by this response. The amendment recites running the established number of experiments for the algorithm, using a performance metric to evaluate the results of the experiments run for the algorithm, wherein the evaluation comprises comparing the results with a baseline algorithm and the performance metric. Further, claim 107 was amended to recite that the adjustment of logic or parameters by the algorithm adjustment component is performed during the development of the algorithm, to provide clarity and particularity for a person of ordinary skill in the art to understand both the utilization and scope of the invention. As discussed above, at least these recitations are not taught either by the Design-Ease reference or the Angel reference.

Claim 112 has also been amended by this response. The amendment recites simulating the behavior of the algorithm with a Monte Carlo simulation, wherein the Monte Carlo simulation uses at least one confusion matrix to simulate the behavior of the algorithm, wherein the Monte Carlo simulation further computes a z-score based on one or more entries in the confusion matrix, and wherein the z-scores generate random values that reflect the behavior of the algorithm in the confusion matrix. As discussed in claim 38 above, at least these recitations are not taught either by the Design-Ease reference or the Angel reference.

Because neither the Design-Ease reference nor the Angel reference disclose the above features of running the established number of experiments for the algorithm, using a performance metric to evaluate the results of the experiments run for the algorithm, wherein the evaluation comprises comparing the results with a baseline algorithm and the performance metric and simulating the behavior of the algorithm with a Monte Carlo simulation, wherein the Monte Carlo simulation uses at least one confusion matrix to simulate the behavior of the algorithm, wherein the Monte Carlo simulation further computes a z-score based on one or more entries in the confusion matrix, and wherein the z-scores generate random values that reflect the behavior of the algorithm in the confusion matrix, the references cannot anticipate claims 77, 89, 100, 107 and 112 respectively. Accordingly, neither the Design-Ease reference nor the Angel reference supports a *prima facie* case of anticipation of claims 77, 89, 100, 107 and 112. Accordingly, claims 77, 89, 100, 107 and 112 and the claims depending therefrom are believed to be clearly patentable over Design-Ease reference and the Angel reference as well as other prior art of record.

Conclusion

In view of the above-noted distinctions, Applicant submits that claims 1, 14, 26, 33, 38, 77, 89, 100, 107 and 112 are patentably distinguishable over the Design-Ease reference as well as the Angel reference. Claims 2, 3, 5-13, 15, 16, 18-25, 27-32, 34-37,39, 78, 79, 81-88, 90, 92–99, 101-106, 108-111 and 113 are allowable by virtue of their dependency from allowable base claims 1, 14, 26, 33, 38, 77, 89, 100, 107 and 112 respectively as well as for the subject matter they separately recite. Thus, it is respectfully requested that the rejection of claims 1-3, 5-13, 14-16, 18-25, 26-39, 77-79, 81-88, 89-90, 92-99 and 100-113 under 35 U.S.C. §102(a) and 35 U.S.C. §102(b) be withdrawn.

In view of the remarks and amendments set forth above, Applicants respectfully request allowance of the pending claims. If the Examiner believes that a

telephonic interview will help speed this application toward issuance, the Examiner is invited to contact the undersigned at the telephone number listed below.

Respectfully submitted,

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